

What is Claimed is:

1. An optical information recording/reproducing apparatus including an optical pickup for making a light beam emitted from a light source incident on a recording medium via a two-group objective lens so as to record or reproduce optical information on or from said recording medium, said two-group objective lens including a first lens disposed in the vicinity of said recording medium and a second lens disposed at a position facing to said recording medium with said first lens put therebetween, said apparatus comprising:

a moving means for cyclically moving at least one of said first lens and said second lens constituting part of said optical pickup in the direction of the optical axis thereof; and

a control means for performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of reproducing signals obtained from said recording medium at one or more points of the cyclic movement of said at least one of said first lens and said second lens by said moving means.

2. An optical information recording/reproducing apparatus according to claim 1, wherein a cycle of the

cyclic movement of said at least one of said first lens and said second lens by said moving means is synchronized with an appearance cycle of pit signal portions which are previously, discretely formed on said recording medium.

3. An optical information recording/reproducing apparatus according to claim 1, wherein the positional adjustment of said first lens and said second lens is based on an envelope component of a reproducing signal detected by said optical pickup.

4. An optical information recording/reproducing apparatus according to claim 1, wherein a cycle of the cyclic change in a distance between said first lens and said second lens is longer than a cycle of the cyclic movement of said at least one of said first lens and said second lens.

5. An optical information recording/reproducing apparatus according to claim 1, wherein said control means performs, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of reproducing signals from said recording medium at both ends of the cyclic movement of said at least one of said first lens and said second lens by said moving means.

6. An optical information recording/reproducing

apparatus according to claim 1, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through a low band filter is used for detection of a variation in amplitude accompanied by the adjustment of a distance between said first lens and said second lens.

7. An optical information recording/reproducing apparatus according to claim 1, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through a high band filter is used for detection of a variation in amplitude resulting from an offset in focus control.

8. An optical information recording/reproducing apparatus including an optical pickup for making a light beam emitted from a light source incident on a recording medium via a two-group objective lens and at least a third lens so as to record or reproduce optical information on or from said recording medium, said two-group objective lens including a first lens disposed in the vicinity of said recording medium and a second lens disposed at a position facing to said recording medium with said first lens put therebetween and being configured such that a distance between said first lens and said second lens is fixed, said apparatus comprising:

a first drive means for integrally driving said first lens and said second lens in the direction of the optical axis thereof, and a second drive means for driving said third lens in the direction of the optical axis thereof;

a moving means for cyclically moving at least one of said first and second lenses and said third lens constituting part of said optical pickup in the direction of the optical axis thereof; and

a control means for performing, upon focusing operation, the positional adjustment of said first and second lenses and said third lens after start-up of focus control, on the basis of reproducing signals obtained from said recording medium at one or more points of the cyclic movement of said at least one of said first and second lenses and said third lens by said moving means.

9. An optical information recording/reproducing apparatus according to claim 8, wherein a cycle of the cyclic movement of said at least one of said first and second lenses and said third lens by said moving means is synchronized with an appearance cycle of pit signal portions which are previously, discretely formed on said recording medium.

10. An optical information recording/reproducing

apparatus according to claim 8, wherein the positional adjustment of said first and second lenses and said third lens is based on an envelope component of a reproducing signal detected by said optical pickup.

11. An optical information recording/reproducing apparatus according to claim 8, wherein a cycle of the cyclic movement of said third lens is longer than a cycle of the cyclic movement of said first and second lenses.

12. An optical information recording/reproducing apparatus according to claim 8, wherein said control means performs, upon focusing operation, the positional adjustment of said first and second lenses after start-up of focus control, on the basis of reproducing signals obtained from said recording medium at both ends of the cyclic movement of said first and second lenses by said moving means.

13. An optical information recording/reproducing apparatus according to claim 8, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through a low band filter is used for detection of a variation in amplitude accompanied by the movement of said third lense.

14. An optical information recording/reproducing apparatus according to claim 8, wherein of an envelope





ends of the cyclic movement of said at least one of said primary lens and said secondary lens by said moving means.

20. An optical information recording/reproducing apparatus according to claim 15, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through a low band filter is used for detection of a variation in amplitude accompanied by movement of said secondary lens.

21. An optical information recording/reproducing apparatus according to claim 15, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through a high band filter is used for detection of a variation in amplitude resulting from an offset in focus control.

22. An optical information recording/reproducing method which is carried out by using an optical pickup for making a light beam emitted from a light source incident on a recording medium via a two-group objective lens so as to record or reproduce optical information on or from said recording medium, said two-group objective lens including a first lens disposed in the vicinity of said recording medium and a second lens disposed at a position facing to said recording medium with said first lens put therebetween, said method comprising the steps



of:

cyclically moving at least one of said first lens and said second lens constituting part of said optical pickup in the direction of the optical axis thereof; and

performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of reproducing signals obtained from said recording medium at one or more points of the cyclic movement of said at least one of said first lens and said second lens.

23. An optical information recording/reproducing method according to claim 22, wherein a cycle of the cyclic movement of said at least one of said first lens and said second lens is synchronized with an appearance cycle of pit signal portions which are previously, discretely formed on said recording medium.

24. An optical information recording/reproducing method according to claim 22, wherein the positional adjustment of said first lens and said second lens is based on an envelope component of a reproducing signal detected by said optical pickup.

25. An optical information recording/reproducing method according to claim 22, wherein a cycle of the cyclic change in a distance between said first lens and

said second lens is longer than a cycle of the cyclic movement of said at least one of said first lens and said second lens.

26. An optical information recording/reproducing method according to claim 22, wherein said step of performing the positional adjustment of said first lens and said second lens comprises the step of:

performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of reproducing signals from said recording medium at both ends of the cyclic movement of said at least one of said first lens and said second lens.

27. An optical information recording/reproducing method according to claim 22, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through a low band filter is used for detection of a variation in amplitude accompanied by the adjustment of a distance between said first lens and said second lens.

28. An optical information recording/reproducing method according to claim 22, wherein of an envelope component of a reproducing signal detected by said optical pickup, a signal component having passed through

